

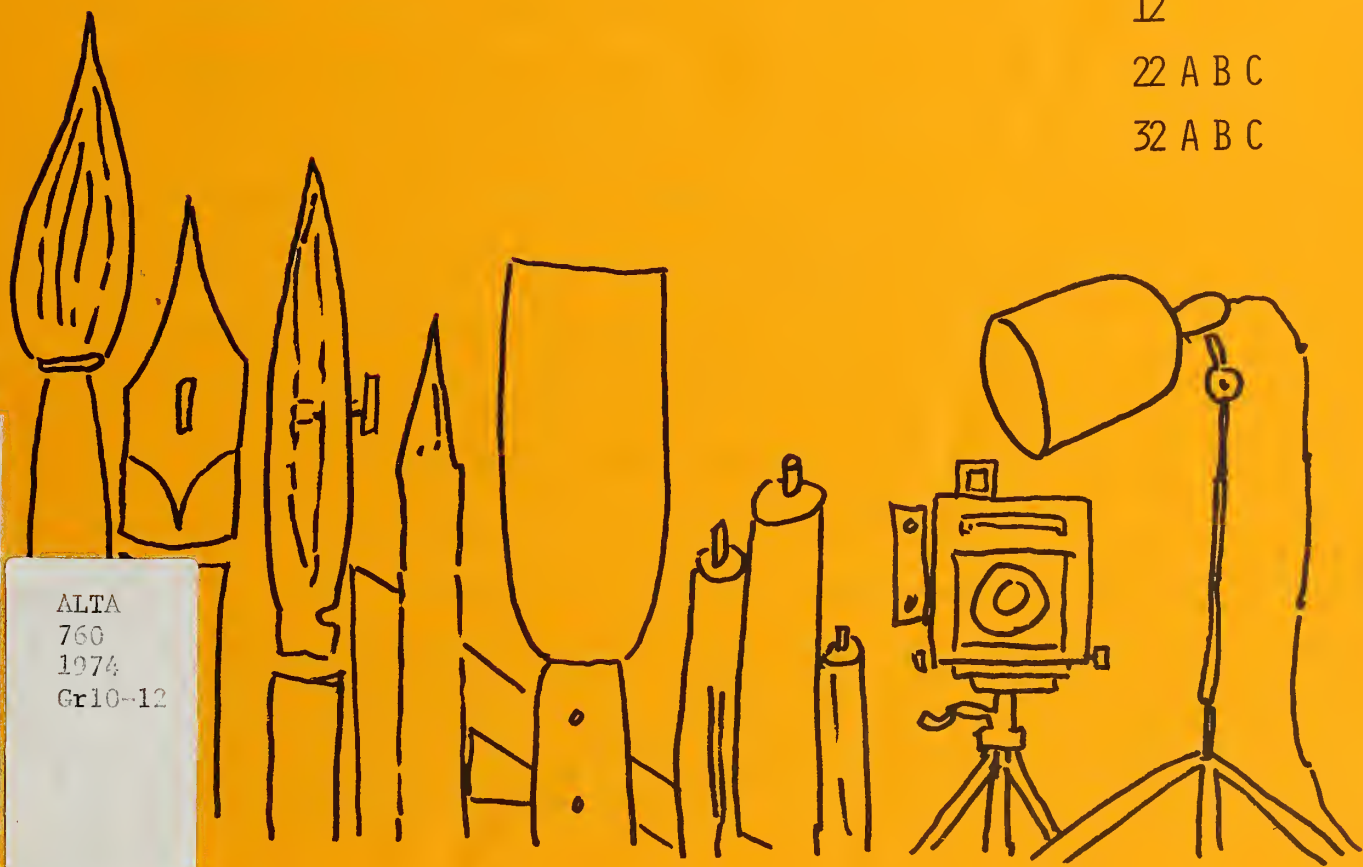
VISUAL COMMUNICATIONS

GRAPHIC ARTS

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A C K N O W L E D G M E N T S

The Department of Education acknowledges with appreciation the contribution of the following Graphic Career Field Ad Hoc Committee members to the preparation of this guide.

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NOTE: This Curriculum Guide is a service publication only. The Senior High School Program of Studies contains the official statement concerning Senior High School courses. The information contained in the Guide is prescriptive insofar as it duplicates that contained in the Program of Studies. There are in the Guide, however, as well as content, methods of developing the concepts, suggestions for the use of teaching aids and lists of additional reference books.



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I. INDUSTRIAL EDUCATION

Industrial Education is a program consisting of courses which provide a continuum of experiences, starting with exploratory activities in the junior high school and expanding in the high school to the development of skills related to career fields. This development of the student's skills is planned for through courses in Industrial Arts and Vocational Education culminating in on-the-job work experience, or entry into a job or post-high school institution for further education.

The program consists of courses ranging from those designed for an exploration of the technologies and trade areas to units of practical preparation for a career. In the process the courses develop the student's knowledge of himself, his talents and his skills.

The Industrial Education course "guides" provide the teacher with an outline of the topics, generalizations and concepts selected as most relevant for the physical and mental development of the students and the logical development of the subject area in accordance with the resources of the school in both teaching personnel and facilities.

The Guide leaves much scope for the teacher to develop content related to the topics, especially in writing behavioral objectives describing specific changes in student behavior anticipated from the learning tasks.

It is expected that each school district will develop a program of Industrial Education appropriate to the fulfillment of the needs of its student clientele.

II. OBJECTIVES

A. Industrial Education Objectives

The general objectives of Industrial Education complement the aims and objectives of the secondary school. The objectives of Industrial Education are:

1. To provide students with the curriculum content designed to develop fundamental tool and procedural skills which help prepare them to enter a family of occupations.
2. To provide students with courses that serve as vehicles which help them relate their academic knowledge to vocational competencies.

3. To provide students the opportunity to develop basic competencies, both academically and in work skills to enter either a job or a post-high school institution for further education.
4. To provide students with the environment whereby they may develop sound attitudes, acceptable work habits, and achieve a feeling of accomplishment.

B. Visual Communication Objectives

The Visual Communications career field should provide an opportunity to:

1. Introduce students to the career opportunities and activities in the field of Visual Communications.
2. Enable the students to develop the knowledge, craftsmanship, skills and standard of performance necessary for job entry or entry into post-secondary institutions.
3. Help students develop an awareness of the principles and elements of design and apply these to the various fields of Visual Communications.

C. Major Areas of Study Objectives

The specific objectives of the Graphic Arts program are in harmony with the purposes of the Industrial Education Program and are as follows:

The Graphic Arts courses shall provide students the opportunity to:

1. Learn and work in an environment that enables them to make a realistic assessment of themselves, their interests and aptitudes as they relate to Graphic Arts.
2. Develop habits and attitudes acceptable to the trade concerning safety, working relationships, and efficient use of time and material.
3. Develop basic competencies in the use of tools, materials and processes that may be used to gain advanced placement in apprenticeship, technical institute programs or on the job.

III. EVALUATION

Evaluation of student growth should be based on stated behavioural changes and specific criteria understood by the students. Allowance should be made for both self and teacher evaluation and in some cases peer evaluation. Evaluation should further be based on the three domains of learning as defined by an Alberta committee of Industrial Education teachers. Their categories are as follows:

- a. Verbal and Written Communication
- b. Personal Growth
- c. Manipulative Skills

The weighting given each of the three measures will depend on the nature of the behaviour being evaluated. For a more detailed treatment of evaluation see the Industrial Education Handbook.

IV. ORGANIZATION

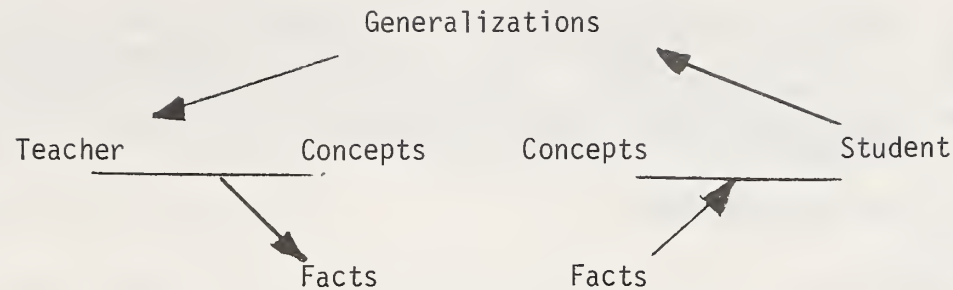
A. Guide Organization

The course guides are developed on the following pattern:

1. Topic: Each course is subdivided into a number of topics.
2. Generalization: The main generalization or "big" idea that students should learn follows each topic.
3. Concepts: The concepts divide the topic into the teaching components. They give more direction on specific areas that should be studied.
4. Behavioural Objectives: These describe specific changes in student behaviour which result from learning tasks he performs.

Facts are taken to be items of specific information, concepts are categories of information and generalizations express the relationship between concepts.

In planning a lesson, the teacher moves down this hierarchy whereas in learning, the student begins with facts and moves upward.



The Guide gives only a few sample behavioural objectives.
It is the responsibility of the teacher to develop as many behavioural objectives as he can teach in the time available.

5. Suggested Activities: A few suggestions are made as to the types of activities that could be used to achieve the behavioural objectives.
6. Resource Materials: This column suggests where materials may be obtained. Teacher records items as they identify them.

B. Program Organization

1. Program Description

The Graphic Arts modules give students the opportunity to learn the theory and skills necessary in the printing trade. They will learn to identify and use the equipment and the materials commonly used in the printing industry. Their projects may include activities ranging from printing forms to a school paper or small books. In the process they will learn about the trade, job opportunities, business practices and enough skills to get a job, go into apprenticeship or enhance their avocational interests.

2. Program Major Organization

The major is divided into six five-credit modules and one module of 5 or 10 credits. Entry into the major is through, Visual Communication 12. The second and third level modules ("22" and "32") are partly sequential; 32B is prerequisite to 32C.

32C is the last course in the sequence and can be used to:

- a. Provide greater depth to a module taken previously.
- b. Take work in actual printing under a work experience plan whereby the Graphic Arts teacher supervises the student on the job. The student must be under the supervision of a journeyman while on the job.

In addition to the modules set out in the major for Graphic Arts a student may select modules designated as minors. These are normally the first level or introductory course of the area, e.g. Drafting would be Drafting 12.

Some students may take only a few modules in a major area as a supplement to their academic program or they may broaden their selection to other career fields. The scope of the Industrial Education program allows the flexibility necessary for the program to be tailored to meet the interests and needs of the individual class or student.

The chart on Page 7 gives a graphic description of the Graphic Arts program. Each module is identified and the sequences are indicated by lines, e.g. After a student has completed one of Visual Communications 12 or General Technology 10 he/she may advance to any module to which the solid line leads. In this case any of 22A, 22B, 22C. Only 32C required that all modules before it be completed.

Once a student has enrolled in a "22" or second level course he may also select modules from the minor fields. Minors for which grants are available are listed on the chart.

Students may find some of the courses in the listed related fields beneficial to their career program development. They are encouraged to take them even though these related courses are not supported by special grants.

3. Facility Organization

The organization of the physical facilities is in part determined by the original plan. There are however adjustments that can be made in the layout by the teacher to accommodate his/her style of teaching. The number of students in a class affects the way the lab or shop is organized. While most of the shops in Alberta are designed for 16 to 20 students a number of factors must be considered in the final assignment of class load. These factors include:

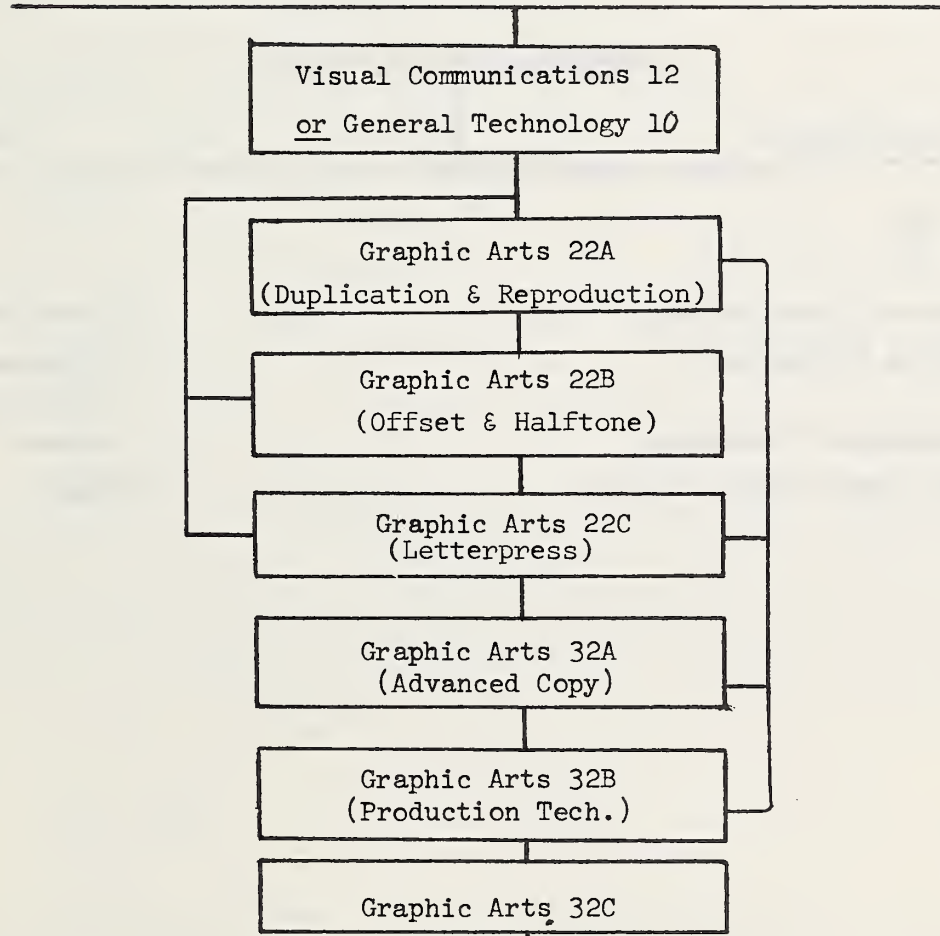
1. physical size of the shop or laboratory
2. type of student
3. amount of equipment
4. type of programming
5. type of course
6. training and experience of the teacher.

Safety of the students and their opportunity to obtain teacher contact are important considerations when class loads are determined.

CAREER FIELD

VISUAL COMMUNICATIONS

Graphic Arts



Minors

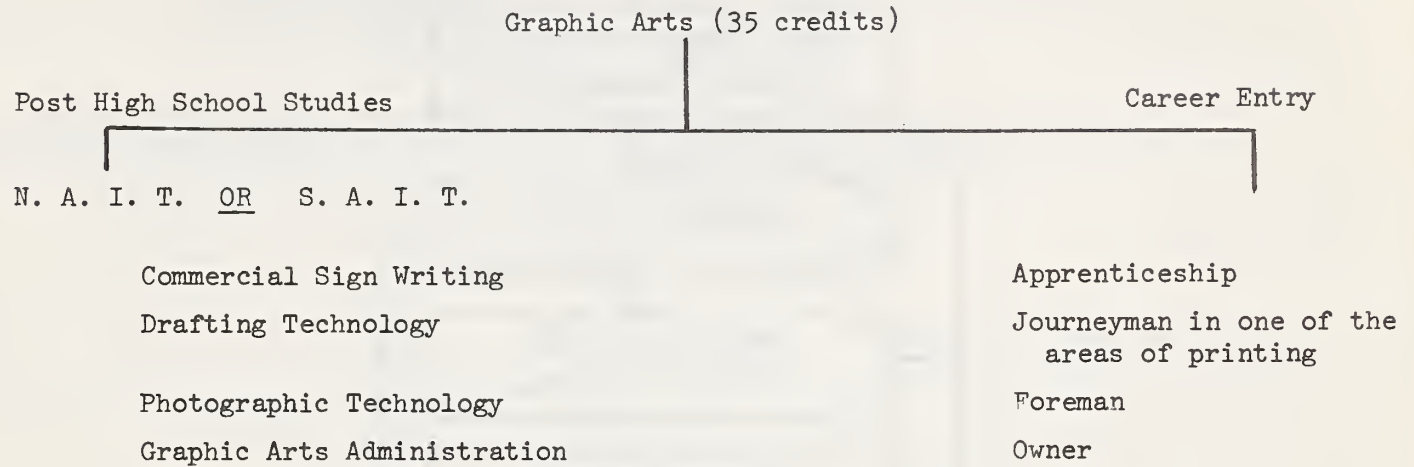
Drafting
Commercial Art

Related

Work Experience
Industrial Arts
Business Education

V. CAREER OPPORTUNITIES

Students taking all or part of the Graphic Arts program may look forward to the following career opportunities.



VI. VISUAL COMMUNICATIONS

1. Visual Communications 12

INTRODUCTION

Visual Communications 12 is the first module in the Visual Communications field and allows students to advance to one of three majors: Drafting, Graphic Arts and Commercial Art.

This introductory unit of Visual Communication is organized in the following manner:

- Material related to the three majors is identified as COMMON.
- All Commercial Art content of this course is found under that title.
- All Drafting content of this course is found under that title.
- All Graphic Arts content of this course is found under that title.

The generalization relates to the three career fields; concepts relate directly to the career field they appear under.

Concepts are arranged numerically. When it is necessary to further define a concept these points are arranged alphabetically. Following each concept are found the suggested Behavioral Objectives and Activities. These are meant to be a guide for the curriculum user so that he may effectively and efficiently plan his program in order that the desired learning can take place. The content of this course is very broad so it is hoped the user will read the entire curriculum and plan his course around the material he is able to teach considering his own background and the equipment available.

I. OBJECTIVES

The objectives of Visual Communications 12 are:

1. To provide a practical environment which will enable a student to make a more realistic assessment of his interests and aptitudes.
2. To develop basic knowledge, understand and appreciation of visual communication materials and processes.

II. CONTENT SUMMARY

1. Introduction to common units
 - relationship of commercial art, graphic arts and drafting
 - relationship with industry
 - occupational information
2. Image creation
 - a. Commercial Art
 - basic drawing
 - composition and design
 - symbols
 - layout
 - b. Drafting
 - shape
 - dimensioning
 - symbols
 - c. Graphic Arts
 - typographical composition
 - layout
 - symbols
3. Conversion processes
 - a. Commercial Art
 - image conversion
 - b. Drafting
 - reproducing drawings
 - c. Graphic Arts
 - photography
 - plate making
 - stencil
 - materials
 - flexography
4. Production processes
 - a. Graphic Arts
 - relief printing
 - stencil
 - materials
 - flexography

5. Finishing procedures
-bindery

III. REFERENCES

Prime References

- *Cogoli, John E. *Photo-Offset Fundamentals*. Industrial Education. McKnight and McKnight Publishing Co., Bloomington, Illinois.
- *Backus. *Advertising Graphics*.
- *Einsenberg and Kafka. *Silk Screen Printing*. McKnight and McKnight Publishing Co., Bloomington, Illinois, 1957.
- **The Life Library of Photography, Time - Life Books*, Chicago, Illinois.

Secondary References

- Delmar Publishers Inc. *Printing Layout and Design*. Thos. Nelson and Son Ltd., Toronto, Ontario.
- Epstein, Samuel and David W. DeArmond. *How to Develop, Print and Enlarge Pictures*. Grosset and Dunlap, New York, 1970.
- McMurtrie, Douglas C. *The Book: The Story of Printing and Bookmaking*. Oxford University Press, Toronto, Ontario.
- Reddick, Dewitt C. *Journalism and the School Paper*. D. C. Heath and Co., Boston, Mass.
- Rowland, Kert. *Learning to See*.

Recommended Periodicals

- **Canadian Printer and Publisher*. MacLean-Hunter Publishing Co., Toronto, Ontario.
- Industrial Arts and Vocational Education*. The Bruce Publishing Co., Milwaukee, Wisc.
- School Shop*. Prakken Publications, Ann Arbor, Michigan.

*Most Useful

IV. CONTENT

Generalizations, concepts and behavioural objectives are outlined on the following pages. Teachers are expected to develop additional behavioural objectives and activities to supplement the identified content and maintain relevancy.

Topic I: INTRODUCTION

Major: Graphic Arts

Generalization A: A meaningful foundation is necessary for a successful and safety conscious vocation in the career field of Visual Communication.

Course: Visual Communication

Concept and Sub-Concepts	Approx. Time	Behavioural Objectives	Activities or Jobs	Resources
<p style="text-align: center;">COMMON</p> <ol style="list-style-type: none"> 1. Commercial Art, Drafting and Graphic Arts - their relationship. 2. Traditions and developments of Visual Communication subject areas. 3. Relationship with industry. 4. Occupation information. 		<p>The student will:</p> <ol style="list-style-type: none"> a. given the necessary information demonstrate by means of an oral or written report the relationship among the Visual Communication career fields. b. given adequate references, orally state the significant historical events related to Commercial Art, Graphics and Drafting. c. given the necessary information, write a one page report on the relationship of the Visual Communication course to industry. c. given the necessary information about careers related to Visual Communication, realistically define his vocational aspirations. 	<p>Field trip to a large newspaper company and a drafting business.</p> <p>Films.</p> <p>Panel discussion.</p> <p>Field trip to various businesses.</p> <p>Lecture.</p>	<p>A B Dick Graphic Communication. Film Strips.</p> <p>16 mm. Sound, Color, 23 Minutes, 1969. "Graphic Communications - We Used to Call it Printing."</p> <p>"Ideas Won't Keep." 80 slides with script and tape. Kodak.</p>

Notes:

Generalization

Concept and Sub-Concepts	Approx. Time	Behavioural Objectives	Activities or Jobs	Resources
5. Safety.		e. given the necessary instructions, correctly demonstrate as well as correctly fill reports on good safety practice on all equipment and materials in the visual communication laboratory.	Demonstration	

Notes:

Generalization B: Image creation is a process of translating ideas into meaningful visual symbols to meet the needs of the customer.

Concept and Sub-Concepts	Approx. Time	Behavioural Objectives	Activities or Jobs	Resources
<p>COMMERCIAL ART</p> <p>1. Basic Drawing</p> <p>(i.) Experimental Drawing.</p> <p>(ii.) Constructive Drawing.</p>		<p>The student will:</p> <p>a. create spontaneously, imaginative free forms and composition involving non-objective and objective material in a variety of techniques and media without preliminary sketching.</p> <p>b. draw accurately in line the four basic forms; cone, cube, cylinder and sphere in a way that demonstrates his understanding of the construction of these forms.</p> <p>c. draw accurately in tone the four basic forms in a way that describes the volume of these forms, his understanding of the medium used and the principles of light and shadow.</p>	<p>Draw freehand borders with continuous pencil line, crossing the shape with parallel lines, diagonals, etc. Experiment with "s" shapes, circles, leaf or tree forms etc.</p> <p>Draw basic forms freehand in line with construction and hidden lines in color or dotted line.</p> <p>Draw groupings of basic forms against contrasting backgrounds with a variety of light sources. Use a variety of media and techniques such as charcoal, conte, wash, pen and ink etc.</p>	

Notes:

Generalization

Concept and Sub-Concepts	Approx. Time	Behavioural Objectives	Activities or Jobs	Resources
(iii) Expressive Drawing.		<p>d. given various stimuli, interpret a variety of ideas or concepts in terms of design or pictorially.</p> <p>e. interpret in stylized fashion and/or representationally, a variety of subject matter such as still life, landscape, plant forms and other natural and man-made objects using a variety of media and techniques.</p> <p>f. represent the human figure in a variety of poses through the use of rapid observation and careful study using a variety of techniques and media.</p> <p>g. demonstrate his understanding of the basic proportions of the human figure and represent these accurately.</p>	<p>Interpret pictorially or with a design, poetry or prose portraying a particular mood or emotion.</p> <p>Outdoor sketching. Illuminated still life compositions. Detailed drawings of objects and textures.</p> <p>Draw rapid gesture poses, group poses, flash poses, moving poses etc.</p> <p>Draw careful contour studies co-ordinating eye and hand movement.</p> <p>Draw mass or volume studies using broad media such as charcoal, conte or wash.</p>	

Notes:

Generalization

Concept and Sub-Concepts	Approx. Time	Behavioural Objectives	Activities or Jobs	Resources
<p>2. Composition and design. - Elements are the "tools" of design. Principles are the methods of using these tools.</p> <p>(i) Elements of Design. - line - direction - shape - size - value - texture - color</p> <p>(ii) Principles of Design.</p>		<p>h. represent various animal forms in a variety of styles using various techniques and media.</p> <p>The student will:</p> <p>a. create designs using one or more of the design elements in a way that demonstrates his understanding of the function and expressive qualities of these elements.</p> <p>b. through various means show by his work his ability to recognize design in nature, man-made and natural objects, architecture etc.</p> <p>c. organize the elements of design according to design principles to create an aesthetically sound composition.</p>	<p>Field trips to zoos or museums Pictorial reference</p> <p>Demonstrations Create designs with a variety of line in various techniques Texture collages Cut out shapes in different values or colors to create design</p> <p>Films Discussions Collection of pictures for design notebook Interpret drawings or pictorial material as design</p>	

Notes:

Generalization

Concept and Sub-Concepts	Approx. Time	Behavioural Objectives	Activities or Jobs	Resources
<p>4. Layout. Layout is the arrangement of graphic symbols to attract attention and to inform.</p>		<p>b. letter accurately a basic gothic alphabet with "B" style speedball pen and a basic manuscript alphabet with "C" style speedball pen in conformity with standards set out in a lettering guide.</p> <p>c. letter accurately a basic gothic alphabet with a lettering brush.</p> <p>d. using the proper drafting tools, construct built-up lettering for reproduction.</p> <p>The student will:</p> <p>a. demonstrate his ability to analyze existing ads in the light of his knowledge of composition, design, type and lettering and redesign them in conformity with the principles of design.</p> <p>b. using pictorial and typographic materials for magazines etc., create abstract ads, according to stated specifica-</p>	<p>Letter practice strokes, alphabets and assignments combining lettering with design or illustration</p> <p>Create abstract pictorial ad with heading, sub-heading, picture, text and signature.</p>	<p><u>Printing Layout and Design</u> (See reference HST)</p>

Notes:

Generalization

Concept and Sub-Concepts	Approx. Time	Behavioural Objectives	Activities or Jobs	Resources
<p style="text-align: center;">DRAFTING</p> <p>1. Shape. The shape of an object can be a 2D surface</p> <p>(i) Orthographic Axonometric.</p> <p>(ii) Oblique Projection.</p> <p>(iii) Perspective.</p>		<p>tions, embodying good composition, design and typography.</p> <p>The student will:</p> <p>a. given an object and a set of drafting equipment, select the correct views required to show the complete shape of the object and correctly draw those views.</p> <p>b. given an orthographic multiview drawing of an object, produce an axonometric drawing either freehand or using instruments.</p> <p>c. given an object drawn in multi-views, sketch the object or draw the object with instruments using oblique (cavalier or cabinet) projection.</p> <p>d. given an object, sketch a one point or two point perspective of it.</p>	<p>Draw simple objects.</p> <p>Sketch and draw objects in isometric.</p> <p>Sketch and draw objects.</p> <p>Sketch simple objects, room interiors, building exteriors.</p>	

Notes:

Generalization

Concept and Sub-Concepts	Approx. Time	Behavioural Objectives	Activities or Jobs	Resources
<p>2. Dimensioning. Size must be shown to completely describe an object. Dimensions must be carefully selected and correctly shown.</p>		<p>e. given a simple object, use drawing instruments to locate the picture plane, ground line, horizon station point and vanishing points and draw the one point or two point perspective as required.</p> <p>The student will:</p> <p>a. given a simple object, select the correct dimension to show and place these dimensions on a drawing of the object in a manner prescribed by CSA Mechanical Engineering Drawing Standards.</p> <p>b. given an object, determine the method best suited to describe the shape completely and produce a drawing that is complete, accurate and correctly dimensional.</p>	<p>Produce instrument drawings or simple objects, eq. cube, pyramid odd-shaped block</p> <p>Draw objects showing complete size and shape descriptions.</p> <p>Do detail drawings of simple objects.</p>	

Notes:

Generalization

Concept and Sub-Concepts	Approx. Time	Behavioural Objectives	Activities or Jobs	Resources
<p>3. Symbols are used to change an idea to a visual form.</p> <p>(i) Lettering.</p> <p>(ii) Line Language.</p>		<p>The student will:</p> <p>a. given a pencil A or B, speed-ball pen, rapidograph pen or quill pen, produce uniform, vertical Gothic upper and lower case letters and numbers that are correctly proportioned and evenly spaced in words and sentences.</p> <p>b. given an object, draw it making correct use of object lines, hidden lines and center lines as prescribed by CSA Mechanical Engineering Drawing Standards.</p> <p>c. correctly draw extension lines, dimension lines and arrowheads as prescribed in CSA Mechanical Engineering Drawing Standards.</p>	<p>Do practice sheets of lettering Letter on drawing sheets</p> <p>Draw objects showing both interior and exterior details.</p>	

Notes:

Generalization

Concept and Sub-Concepts	Approx. Time	Behavioural Objectives	Activities or Jobs	Resources
<p style="text-align: center;">GRAPHIC ARTS</p> <p>1. Typographic Composition.</p> <p style="padding-left: 40px;">(i.) Manual and mechanical composition</p> <p style="padding-left: 40px;">(ii.) Justification</p> <p style="padding-left: 40px;">(iii.) Measurement</p>		<p>The student will:</p> <p>a. compose error-free columns and headings of type by manual and mechanical means, using the tools and equipment found in the various visual communication laboratories, to the degree of competence determined by the instructor.</p> <p>b. given a pre-determined piece of copy, set a page of justified copy, either by manual or by mechanical equipment. He will be aware of and be able to apply the rules of straight matter composition regarding word, letter and line spacing.</p> <p>c. accurately apply the printer's system of measurement to all phases of assignments given within the Graphic Arts and Commercial Art units of the Visual Communication Course. This includes tools, equipment, spacing, materials and type.</p>		

Notes:

Generalization

Concept and Sub-Concepts	Approx. Time	Behavioural Objectives	Activities or Jobs	Resources
<p>2. Layout</p> <p>(i) Advertising and commercial layout</p> <p>(ii) Newspaper and magazine layout</p>		<p>The student will:</p> <p>a. given the necessary materials and instruction, create a neat, well-spaced and aligned camera-ready layout from a rough dummy or a comprehensive sketch.</p> <p>b. given the necessary materials and information, create a neat, well-planned newspaper or magazine. The student will pay careful attention to the size and placement of headlines, photographs, windows, related articles, ruling procedures, cutting stories in an appropriate place, cut off rules, 30's and position of advertisements. The assignment must be carefully checked for errors in grammar, spelling as well as overall neatness.</p>	<p>The student will take a comprehensive sketch prepared in the Commercial Art section of the course. From this he will create a comprehensive layout.</p> <p>Produce a school paper, magazine, program or similar project.</p>	
<p>3. Symbols</p> <p>(i) English for Printers</p>		<p>a. given three paragraphs of copy, demonstrate his understanding of the rules of</p>		

Notes:

Generalization

Concept and Sub-Concepts	Approx. Time	Behavioural Objectives	Activities or Jobs	Resources
<p>(ii.) Proofreader's Symbols</p> <p>(iii.) Basic Type Styles and Anatomy</p>		<p>hyphenation, punctuation and spelling.</p> <p>b. correctly proofread copy using proofreading symbols, in order to assure neat and accurate composition.</p> <p>c. given the necessary information, correctly identify the basic type styles and the identifying features of each style. He should be aware of the history of type, origin of the alphabet, invention of type and the means of orderly storage of type such as cases, discs, slides, lettraset, etc.</p>	<p>Proofread the school newspaper or the daily newspaper.</p>	

Notes:

Generalization C: Symbols and design elements are converted to reproducible elements which can be assembled into a form to facilitate efficient reproduction and dissemination of visual information.

Concept and Sub-Concepts	Approx. Time	Behavioural Objectives	Activities or Jobs	Resources
<p>COMMERCIAL ART</p> <p>I. Image Conversion.</p> <p>(i.) Elements and principles of composition</p> <p>(ii.) Photographic materials</p>		<p>The student will:</p> <p>a. given the necessary instructions and equipment, show his knowledge and understanding of the elements and principles of composition through the results he achieves in his photography assignments. These elements and principles include harmony, proportion, balance, rhythm, simplicity, centre of interest, major and minor motif, framing, baseline, lines, color, depth of field and light (natural and artificial).</p> <p>b. given the necessary information, identify the following photographic materials: film, poly-contrast filters, paper-grades and surfaces and chemicals. He will also correctly demonstrate his ability to use such materials by completing assigned projects.</p>		

Notes:

Generalization

Concept and Sub-Concepts	Approx. Time	Behavioural Objectives	Activities or Jobs	Resources
(iii.) The camera-tynes, functions, techniques		The student will: a. correctly operate adjustable cameras and understand the functions of this instrument and the techniques employed when capturing an image, such as: filters, depth of field, varying shutter speeds, varying apertures and double exposure for a desired effect.	Still life, portraiture, displays. Take a series of photographs consisting of 10 still life, 10 portraits, (vary light in each picture), and 10 display. Develop, contact print, enlarge the best, mount them in a booklet bound and constructed by the student. Write a critique on the success.	
(iv.) Developing and printing		b. produce good average contrast films and prints and display an understanding of contact printing, enlarging and the chemical processes used in developing film and paper.		
(v.) Stencil duplicating		c. make stencils by using the tuche, glue, laquer stencil and spatter painting processes.		<u>Silkscreen Printing</u> (See reference list)

Notes:

Generalization

Concept and Sub-Concepts	Approx. Time	Behavioural Objectives	Activities or Jobs	Resources
<p style="text-align: center;">DRAFTING</p> <p>1. The photographic method is used as a conversion process in drafting to reproduce original drawings, to make blueprints and to adapt original drawings to new designs.</p> <p style="padding-left: 40px;">(i.) Wet and Dry Copiers</p> <p style="text-align: center;">GRAPHIC ARTS</p> <p>1. Photography is used in graphics to produce pictures for stories as well as to reproduce comprehensive layouts in a form which can be mass produced.</p>		<p>The student will:</p> <p>a. correctly operate and make good quality reproductions of original drawings through the use of the different wet and dry copiers found in the Visual Communication laboratories.</p>		

Notes:

Generalization

Concept and Sub-Concepts	Approx. Time	Behavioural Objectives	Activities or Jobs	Resources
<p>(i.) Photo Journalism</p> <p>(ii.) Process Camera</p> <p>(iii.) Plate Making</p>		<p>The student will:</p> <p>a. show his mastery of the camera as it was taught in Commercial Art and will be able to apply his knowledge to taking meaningful pictures which can be used in publications to help present a story.</p> <p>b. operate and show his knowledge of the operation of the process camera by making good line shots of assignments made in Commercial Art. He will correctly strip, opaque and mask these negatives so that a plate can be made from them.</p> <p>c. make the various kinds of plates including direct image masters, photographic, Electrostatic and thermal, and demonstrate his understanding of the process by which each type of plate is produced.</p>	<p>The student will prepare a photographic essay of an assigned story or poem. He will develop his film, contact print his negatives, enlarge the best and mount the pictures into a book which will be constructed and bound by the student. He will write a critique on the success of this project.</p>	<p><u>Life Library of Photography</u> (See Reference list)</p>

Notes:

Generalization

Concept and Sub-Concepts	Approx. Time	Behavioural Objectives	Activities or Jobs	Resources
Stencil duplicating		The student will: a. correctly make the various kinds of stencils including mimeograph, thermofax, Gestetner, Silk screen, mechanical and energy.		

Notes:

Generalization D: Distribution of reproducible visual elements must be carried out through the use of rapid, economic, accurate, reliable production processes in order to meet societal needs.

Concept and Sub-Concepts	Approx. Time	Behavioural Objectives	Activities or Jobs	Resources
<p style="text-align: center;">GRAPHIC ARTS</p> <p>1. The student in Graphic Arts must learn how to operate the different kinds of reproduction media and materials.</p> <p style="padding-left: 40px;">(i) Relief Printing</p>		<p>The student will:</p> <ol style="list-style-type: none"> a. correctly and safely operate the platen press, proofing presses and other letter press equipment which is found in the Graphics lab. Given the proper instruction the student will correctly lock-up a chase according to the method chosen by the instructor. b. be aware of the different systems of page imposition correctly use whatever system is necessary for any assignment given by the instructor. c. correctly set and read type (8 1/2" by 11" page) upside down from left to right. 	<p>Make up a page for a school newspaper.</p>	

Notes:

Generalization

Concept and Sub-Concepts	Approx. Time	Behavioural Objectives	Activities or Jobs	Resources
<p>(ii) Planographic-Grease and Water do not mix</p> <p>Stencil - Mechanical</p> <p>Materials</p> <p>(i) Paper</p>		<p>d. properly operate an offset press and understand all the operating functions of this machine. He will run different types of masters including direct image, electrostatic and photo-transfer plates. He will also operate, if available, spirit duplicators, Ditto and Xerox machines.</p> <p>The student will:</p> <p>a. given the necessary equipment and instruction, correctly produce posters and other assignments using type and illustration by making silkscreen stencils from paper, lacquer films and photographic silk-screening materials. He will write a 5-page report on the silk screen process thereby demonstrating his knowledge of the entire process.</p> <p>The student will:</p> <p>a. given the necessary information, choose paper and card stock suitable for any given assign-</p>		

Notes:

Generalization

Concept and Sub-Concepts	Approx. Time	Behavioural Objectives	Activities or Jobs	Resources
<p>(ii) Ink</p> <p>4. Flexography</p>		<p>ment. He will know how to cut large sheets of stock to produce maximum usage with minimum waste. He will understand paper weights and basic paper sizes.</p> <p>b. correctly choose the appropriate ink for any given job, understand the characteristics of different kinds of ink and be familiar with additives for inks and their use.</p> <p>The student will:</p> <p>a. make rubber stamps and demonstrate his understanding of how this process is related to the flexography process in the printing industry by writing a one-page report comparing both processes.</p>		

Notes:

Generalization E: Visual information is distributed in a convenient, orderly, durable form to meet the needs of the consumer.

Concept and Sub-Concepts	Approx. Time	Behavioural Objectives	Activities or Jobs	Resources
<p>Bindery Operations. A product must be finished in a form which makes it marketable.</p> <p>(i.) Assemble</p> <p>(ii.) Binding</p> <p>(iii.) Trimming</p> <p>(iv.) Preservatives</p>		<p>The student will:</p> <p>a. correctly operate the collater, folder, perforator and scorer and paper drill in order to facilitate orderly assembly of printed assignments.</p> <p>b. correctly bind material by stitching, nadding, cerloxing or stapling so that the finished product is in the form of a book or a booklet. He must be able to correctly use a jogger in order to shift the material into a neat, even pile.</p> <p>c. safely operate a manual or mechanical paper cutter in order to trim the rough edges off the finished printed work.</p> <p>d. correctly operate a laminating press in order to make the printed image on some assignments more durable.</p>	<p>Make a color life or laminate covers or signs.</p>	

otes:

Generalization

Concept and Sub-Concepts	Approx. Time	Behavioural Objectives	Activities or Jobs	Resources
(v.) Packaging and shipping		e. correctly package customer jobs so that they are not damaged in shipping.		
(vi.) Mounting		f. correctly operate a mounting press for the purpose of mounting photographs on backing board and for mounting printed material on matt board.		

Notes:

VI. VISUAL COMMUNICATIONS

2. Graphic Arts 22A

Basic Duplication and Reproduction

INTRODUCTION

This course follows naturally from the introductory course and provides the basis for later work in Graphics.

I. OBJECTIVES

The objectives of Graphic Arts 22A are:

1. To provide a vehicle whereby skills and competencies are gained in areas of image creation, through image conversion to finishing processes.
2. To provide students with opportunities to work with a variety of duplicating processes.

II. CONTENT SUMMARY

1. History
2. Safety
3. Image creation
 - principles of design
4. Conversion processes
 - hot metal
 - photographic
 - strike-on
 - hand assembled
 - combination of processes
 - type selection
 - finishing steps
5. Production processes
 - photo-conversion
 - presensitized carriers
 - lithography
 - other
6. Finishing Processes
 - quality considerations and cost
 - binding techniques

III. REFERENCES

Cogoli, *Offset Fundamentals*. 2nd Edition.

Spillman, *Illustrated Teach Yourself Photography*.

Kodak, Kodak Series for Photography and High Sensitive Materials

Kodak, Kodak Student Lessons - Tapes and Slides

Klingefelter, *Bookbinding Made Easy* - Bruce.

A. B. Dick, A. B. Dick Series

IV. CONTENT

Generalizations, concepts and behavioural objectives are outlined on the following pages. Teachers are expected to develop additional behavioural objectives and activities to supplement the identified content and maintain relevancy.

Topic I: INTRODUCTION AND HISTORY

Major: Graphic Arts

Generalization A: A meaningful foundation is necessary for a successful and safety-conscious vocation in the career field of visual communication.

Course: Graphic Arts 22A
(Basic Duplication
Reproduction)

Concept and Sub-Concepts	Approx. Time	Behavioural Objectives	Activities or Jobs	Resources
<p>1. Historical Developments</p> <p>2. Safety Attitudes</p> <p>3. Orientation</p>		<p>The student will:</p> <p>a. given the appropriate instructions and references relate accurately the evolution of the printing industry, either orally or in essay form.</p> <p>a. after a demonstration and discussion relative to the safe operation of the equipment and the hazards with materials, do a job hazard analysis of the unsafe acts and unsafe conditions on the assigned topics.</p> <p>a. given the necessary information about career opportunities related to the graphics field, realistically outline and justify his vocational goals.</p>		

Notes:

Generalization B: Image creation is a process of translating ideas into meaningful visual symbols to meet the needs of the customer.

Concept and Sub-Concepts	Approx. Time	Behavioural Objectives	Activities or Jobs	Resources
1. Principles of Design		The student will: a. given information on the principles of design recognize and employ the appropriate design elements while composing assigned advertisements, posters and full-page layouts.		
2. Copy Preparation		a. given the required information prepare a separate acceptable copy for each of the following methods: (i.) manual method (ii.) mechanical method (iii.) conversion method (direct or indirect) (iv.) photographic method		
3. Layout Preparation		a. given the necessary instruction and materials, complete, to the satisfaction of the teacher, a layout stemming from the assigned ideas, showing his: (i.) thumbnail sketch (ii.) rough layout (iii.) comprehensive dummy and (iv.) the mechanical or completed artwork		

Notes:

Generalization C: Symbols and design elements are converted to reproducible elements which can be assembled into a form to facilitate efficient reproduction and dissemination of visual information.

Concept and Sub-Concepts	Approx. Time	Behavioural Objectives	Activities or Jobs	Resources
<p>1. Hot Metal</p> <p>2. Photographic</p> <p>3. Strike-on</p> <p>4. Hand-assembled</p> <p>5. Combination of Conversion Processes</p>		<p>The student will:</p> <p>a. given the necessary information on the available equipment (linotype, monotype, ludlow, intertype, etc.) demonstrate his skills and describe each process to the teacher's satisfaction in the allotted time.</p> <p>a. same as above (e.g. fotosetter, computerized veri-typer, strip printer, others)</p> <p>a. same as above (e.g. typewriter, justewriter, others)</p> <p>a. same as above (e.g. lettering pens, sets and brushes, adhesives, templates, clip-outs, ornamental types)</p> <p>a. given instructions and experience with the various conversion processes justify orally or in written form his choice of combinations of equipment for the assigned jobs.</p> <p>b. take into consideration such</p>		

Notes:

Generalization

Concept and Sub-Concepts	Approx. Time	Behavioural Objectives	Activities or Jobs	Resources
6. Type Selection		<p>factors as: time, cost, quality</p> <p>a. given samples and instructions on the common type families (Roman old style, Gothic, Italic, Text, Script, and Roman Modern) their derivatives and applications, correctly match the appropriate type for the assignments.</p>		
7. Finishing Steps		<p>a. given the materials and instructions satisfactorily impose (where required) mask, strip, opaque, and burn plates.</p>		

Notes:

Concept and Sub-Concepts	Approx. Time	Behavioural Objectives	Activities or Jobs	Resources
8. Photo-Conversion		<p>The student will:</p> <ul style="list-style-type: none"> a. calibrate camera for line copy b. choose the correct type of film for the assignments and orally justify his choices with reference to film characteristics c. given the references and information match the correct enlarger filters and/or photographic paper for the assigned negatives. d. given the situation where enlarging or reducing are required for a line-halftone combination, make the necessary calculations and camera adjustments to satisfy the required situation. 		
9. Reversal Processes (i) Black and white (ii) Color		<ul style="list-style-type: none"> a. Given the required potential the student will produce black and white pictures and colored slides of satisfactory density. 		

Notes:

Generalization D: Dissemination of reproducible elements must be carried out through the use of rapid, economic, accurate and reliable production processes in order to meet societal needs.

Concept and Sub-Concepts	Approx. Time	Behavioural Objectives	Activities or Jobs	Resources
<p>1. Presensitized Carriers</p> <p>2. Lithographic</p>		<p>The student will:</p> <p>a. given assignments to prepare a master by the processes available, produce quality materials as well as match the given job situation with the appropriate process in terms of quality and process. The assignment might include each of the following:</p> <ul style="list-style-type: none"> (i) strike-on (ii) diazo (iii) photo-transfer (iv) electrostatic (v) wet copies (vi) thermographic <p>a. solve at least 5 mechanical problems pre-set by the instructor in the following systems:</p> <ul style="list-style-type: none"> (i) paper feeding system (ii) moistening system (iii) inking system <p>b. given instructions and references, do the required preventative maintenance on the available machine.</p>		

Notes:

Generalization

Concept and Sub-Concepts	Approx. Time	Behavioural Objectives	Activities or Jobs	Resources
<p>3. Other Process</p> <ul style="list-style-type: none"> (i) Letterpress (ii) Screen Process (iii) Grauvère (Intaglio) 		<p>a. given the appropriate references and experience (where possible), relate orally or in essay form:</p> <ul style="list-style-type: none"> (i) How each process functions. (ii) What the advantages and limitations of each are. (iii) When it is appropriate to use each. 		

Generalization E: Visual information is distributed in a form which is in an orderly, convenient, and durable form to meet the needs of the consumer.

Concept and Sub-Concepts	Approx. Time	Behavioural Objectives	Activities or Jobs	Resources
<p>1. Finishing Techniques are Influenced by Factors Such as Cost, Desired Appearance and Use</p> <p>2. Binding Techniques Involved in the Finished Product Identify the Skill of the Artisan Involved</p>		<p>The student will:</p> <p>a. through experiences and study understand and perform the following satisfactorily; cutting, creasing, scoring, folding, perforating, drilling & punching, gathering & collecting, jogging, round cornering, numbering, embossing and stamping, varnishing and thermography. The quality of the finished product and the quality produced in the allotted time will determine the degree of proficiency that the student has gained.</p> <p>a. perform as many of the following as are possible:</p> <ul style="list-style-type: none"> (i.) saddle stitching (ii.) side stitching (iii.) case bound (iv.) perfect fastening (v.) loose leaf (post & ring) (vi.) mechanical (plastic & spiral wire) (vii.) padding, gumming and gluing 		

Notes:

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VI. VISUAL COMMUNICATIONS

3. Graphic Arts 22B

Offset Line and Halftone



INTRODUCTION

Graphic Arts 22B may be taken following the introductory course.

I. OBJECTIVES

The objectives of Graphic Arts 22B are:

1. To provide the opportunity to develop basic skills and knowledge in handling and organizing materials and equipment in offset.
2. To provide opportunities for setting up and operating production equipment.

II. CONTENT SUMMARY

1. Introduction
 - planographic process
 - line and tonal copy
 - occupations
 - development of photography
2. Image creation
 - typography and design
 - layouts
 - copy preparation
 - proofing
3. Conversion
 - camera
 - film processing
 - proofing
 - stripping
 - platemaking
4. Production
 - offset presswork
 - cutting
 - bindery

III. REFERENCES

*Cogoli, *Photo-Offset Fundamentals*.

Silver, *Modern Graphic Arts Paste-up*.

Kodak, *Line Photography*.

Kodak, *Halftone Photography*.

* Most Useful.

IV. CONTENT

Generalizations, concepts and behavioural objectives are outlined on the following pages. Teachers are expected to develop additional behavioural objectives and activities to supplement the identified content and maintain relevancy.

Topic I: INTRODUCTION

Major: Graphic Arts

Generalization A: A meaningful foundation is necessary for a successful and safety conscious vocation in the career field of visual communication.

Course: Graphic Arts 22B
(Offset Line and Halftone)

Concept and Sub-Concepts	Approx. Time	Behavioural Objectives	Activities or Jobs	Resources
<p>Planographic Process</p> <p>(i.) Lithography</p> <p>Line & Tonal Copy</p> <p>The type of copy determines preparation and production procedures.</p> <p>Occupations</p> <p>Development of Photography</p>		<p>The student will:</p> <p>a. following instruction explain the principle of the process and explain the meanings of the terms:</p> <p style="padding-left: 40px;">(i.) lithography (ii.) offset lithography (iii.) photo-offset lithography</p> <p>a. given copy, distinguish accurately which is line copy and which is tonal copy.</p> <p>a. upon course completion, state the major occupational areas and specific occupations within an area.</p> <p>a. after study trace the major steps in the development of photography.</p>		

Generalization B: Image creation is the process of translating an idea into meaningful visual symbols to meet the needs of the customer.

Concept and Sub-Concepts	Approx. Time	Behavioural Objectives	Activities or Jobs	Resources
<p>1. Typography and Design</p> <p>Ideas have to be transformed into a producible form.</p> <p>2. Layouts</p> <p>3. Copy Preparation</p>		<p>The student will:</p> <p>a. given an idea, or rough copy, choose images which are appropriate as to style, size, spacing and which demonstrate legibility, harmony, contrast.</p> <p>b. given samples of type, classify them with respect to size and style to an 80% ability.</p> <p>a. given an idea, produce thumbnail and rough layouts to such a standard that they could be completed by someone else without them asking questions of the layout man.</p> <p>a. given rough copy, prepare and produce camera copy involving:</p> <p>(i.) line and tonal copy</p> <p>(ii.) combinations</p> <p>(iii.) scaling</p> <p>(iv.) color combinations of flat color</p> <p>(v.) screen tints</p> <p>(vi.) moderate close register work</p> <p>(vii.) step and repeat work with</p>		

Notes:

Generalization

Concept and Sub-Concepts	Approx. Time	Behavioural Objectives	Activities or Jobs	Resources
4. Proofing and Proof-reading		<p>as many methods as are available to a quality suitable for conversion and to an accuracy of 3 points.</p> <p>a. given metal type produce satisfactory reproduction proofs and be able to proofread with the ability to use accurately 8 proofreaders' marks.</p>		

Notes:

Generalization C: Symbols and design elements are converted to reproducible elements which can be assembled into a form to facilitate efficient reproduction and dissemination of visual information.

Concept and Sub-Concepts	Approx. Time	Behavioural Objectives	Activities or Jobs	Resources
<p>1. Camera</p> <p>(i.) Operation</p> <p>(ii.) Screens</p> <p>(iii.) Films</p> <p>(iv.) Filters</p> <p>(v.) Negatives</p>		<p>The student will:</p> <p>a. after instruction and practice,</p> <p>(i.) make the necessary adjustments and exposure calculations for line and halftone work for same-size and scaled copy</p> <p>(ii.) choose appropriate contact screen</p> <p>(iii.) calibrate an exposure computer</p> <p>(iv.) make a correct choice of filter</p> <p>(v.) choose appropriate film to achieve a negative within a 10% error range</p> <p>b. after study, explain</p> <p>(i.) film structure and composition</p> <p>(ii.) the process of halftone photography</p> <p>(iii.) the camera operations and how light is controlled</p>		

Notes:

Generalization

Concept and Sub-Concepts	Approx. Time	Behavioural Objectives	Activities or Jobs	Resources
. Film Processing		The student will: <ul style="list-style-type: none"> a. following instruction, choose, measure and mix the correct chemicals to achieve satisfactory development of film. b. with previously exposed film, process, by an appropriate method to suit the copy, to achieve a negative which is satisfactory for further operations. c. after study, explain the elementary chemical reaction of the chemicals used in developing. 		
. Proofing		<ul style="list-style-type: none"> a. given a negative, produce a satisfactory proof by a method chosen by the teacher. 		
. Stripping		<ul style="list-style-type: none"> a. given the materials, layout masks and produce flats involving: <ul style="list-style-type: none"> (i.) single or multiple negatives (ii.) combinations (iii.) step and repeat (iv.) multiple burn-ins (v.) 2 or 4-page impositions 		

otes:

Generalization

Concept and Sub-Concepts	Approx. Time	Behavioural Objectives	Activities or Jobs	Resources
5. Platemaking		<p>To an accuracy of 3 points.</p> <p>a. after instruction, produce all types of plates available in the shop to a standard acceptable for press production with particular respect to quality and register.</p>		

Notes:

Generalization D: Visual dissemination of reproducible elements must be carried out through the use of rapid, economical, accurate, reliable production processes in order to meet societal needs.

Concept and Sub-Concepts	Approx. Time	Behavioural Objectives	Activities or Jobs	Resources
<p>1. Offset Presswork</p> <p>(i.) Operation</p> <p>(ii.) Control</p> <p>(iii.) Maintenance</p>		<p>The student will:</p> <p>a. given the paper and plates, set up all press systems on smaller sized presses in order to:</p> <p>(i.) obtain single sheet feeding</p> <p>(ii.) maintain register to within .025</p> <p>(iii.) maintain ink density to within a density range of .20</p> <p>(iv.) prevent set-off</p> <p>(v.) control pressure to a level which provides satisfactory reproduction</p> <p>(vi.) prepare damper solution to a prescribed pH range</p> <p>(vii.) provide correct clean-up and maintenance</p> <p>b. after press experience and study name the machine parts and explain the operations of the various press systems to the satisfaction of the teacher.</p>		

Notes:

Generalization

Concept and Sub-Concepts	Approx. Time	Behavioural Objectives	Activities or Jobs	Resources
<p>1. Cutting</p> <p>2. Bindery</p>		<p>The student will:</p> <p>a. given an assignment after demonstrations, calculate stock requirements accurately and cut stock to within an accuracy of 1/32"</p> <p>a. after instruction, complete finishing procedures involving</p> <ul style="list-style-type: none"> (i.) hand and small machine folding (ii.) scoring (iii.) numbering (iv.) perforating (v.) padding (vi.) round cornering (vii.) gathering (viii.) wrapping (ix.) drilling (x.) plastic binding (xi.) stitching <p>To the satisfaction of the customer.</p>		

Notes:

VI. VISUAL COMMUNICATIONS

4. Graphic Arts 22C

Letterpress

INTRODUCTION

Graphic Arts 22C (Letterpress) may be taken at any time following the introductory course. It is not a required module for any of the other courses.

I. OBJECTIVES

The objectives of Graphic Arts 22C are:

1. To provide the opportunity to develop basic skills and knowledge in handling and organizing materials and equipment in letterpress.
2. To provide opportunities for setting up and operating production equipment.

II. CONTENT SUMMARY

1. Visual communication
 - relief printing
2. Image creation
 - measurement
 - image materials
 - spacing
 - composition and make-up
 - lock-up
 - proofing
 - typography
3. Conversion
 - plates
4. Production
 - letterpress printing
5. Finishing
 - bindery

III. REFERENCES

- Primary: Polk. *Practice of Printing*.
- Secondary: Delmar. *Printing Layout and Design*.
- Delmar. *Practical Problems in Mathematics - Printing Trades*.
- Karch and Kuber. *Graphic Arts Procedures (Basic)*.

IV. CONTENT

Generalizations, concepts and behavioural objectives are outlined on the following pages. Teachers are expected to develop additional behavioural objectives and activities to supplement the identified content and maintain relevancy.

Topic I. INTRODUCTION

Major: Graphic Arts

Generalization A: A meaningful foundation is necessary for a successful and safety conscious vocation in the career field of visual communication.

Course: Graphic Arts 22C
(Letterpress)

Concept and Sub-Concepts	Approx. Time	Behavioural Objectives	Activities or Jobs	Resources
<p>1. Visual Communication</p> <p>2. Relief Printing Process</p> <p>(i) image area</p> <p>(ii) image size</p> <p>(iii) press styles</p>		<p>The student will:</p> <p>a. after instruction, define visual communication and state its particular implication to Graphic Arts and also state at least five occupations in this field.</p> <p>a. after discussion and reading, illustrate the concept of relief printing</p> <p>b. given a situation involving inaccuracies of image height, diagnose a corrective procedure.</p> <p>c. given drawings of the various styles of presses, identify them correctly.</p>		

Notes:

Generalization B: Image creation is a process of translating an idea into meaningful visual symbols to meet the needs of the customer.

Concept and Sub-Concepts	Approx. Time	Behavioural Objectives	Activities or Jobs	Resources
<p>1. Measurements</p> <p>2. Image Materials</p> <p>3. Spacing Materials</p> <p>4. Storage Systems</p>		<p>The student will:</p> <p>a. given situations involving the point system, be at least 80% correct in measurements.</p> <p>a. given examples of image materials:</p> <p style="padding-left: 40px;">(i.) define or classify the image</p> <p style="padding-left: 40px;">(ii.) explain its production</p> <p style="padding-left: 40px;">(iii.) demonstrate correct handling techniques</p> <p>a. given examples of spacing materials, judge sizes to an accuracy of 75% and state specific uses for them.</p> <p>a. after instruction and practice, demonstrate a 95% accuracy in the use of storage facilities.</p>		

Notes:

Generalization

Concept and Sub-Concepts	Approx. Time	Behavioural Objectives	Activities or Jobs	Resources
5. Composition and Make-up		a. given copy to follow, apply correct procedures in type-setting and make-up to the extent that all forms are representative of the layout and suitable for lock-up.		
6. Lock-up		a. given diagrams and demonstrations, build up spacing material in conformity with established practices so as to achieve correct lock-up of form.		
7. Proofing and Proofreading		a. given a form to proof, be able to proof same to a quality that is suitable for the purpose required b. after studying proofreading marks, use and be able to state the meanings of eight common marks.		
8. Typography		a. given an idea, create a design and layout which utilizes the concepts of three principles of design.		

Notes:

Generalization C: Symbols and design elements are converted to reproducible elements which can be assembled into a form to facilitate efficient reproduction and dissemination of visual information.

Concept and Sub-Concepts	Approx. Time	Behavioural Objectives	Activities or Jobs	Resources
1. Original and Duplicate Plates		<p>The student will:</p> <ol style="list-style-type: none"> a. from a list of original and duplicate plates, explain the manufacturing procedures of two of them b. given copy of matrix, produce an original or duplicate plate to a standard which could be used for printing. 		

Notes:

Generalization D: Visual dissemination of reproducible elements must be carried out through the use of rapid, economical, accurate, reliable production processes in order to meet societal needs.

Concept and Sub-Concepts	Approx. Time	Behavioural Objectives	Activities or Jobs	Resources
<p>1. Letterpress Printing (Letterpress printing is produced by transferring ink from form to paper by direct impression of form to paper)</p>		<p>The student will:</p> <p>a. given a situation requiring press preparation and production, prepare, operate and produce to a level satisfactory to the teacher and/or customer:</p> <ul style="list-style-type: none"> (i) dressing and packing the press (ii) control of impression (iii) control of ink (iv) an elementary make-ready (v) a rate of production applicable to the type of job and press (vi) set-up and operation of press systems to obtain sheet feeding to an accuracy of 1/25" in hand feeding and .025 in automatic feeding (vii) clean up and maintenance of press (viii) safe working practices. 		

Notes:

Generalization E: Visual information is distributed in an orderly, convenient, durable form to meet the needs of the customer.

Concept and Sub-Concepts	Approx. Time	Behavioural Objectives	Activities or Jobs	Resources
1. Bindery		<p>The student will:</p> <ol style="list-style-type: none"> a. following instruction, complete the required finishing operations to customer specifications and teacher satisfaction. 		

Notes:



VI. VISUAL COMMUNICATIONS

5. Graphic Arts 32A

Advanced Copy



INTRODUCTION

This is a senior course and students should have taken at least one of the 22 courses.

I. OBJECTIVES

The objectives of Graphic Arts 32A are to provide students with the opportunity to:

1. Do problem solving in the processes involved.
2. Develop competent skills in materials, tools, and equipment handling.
3. Practice safe work habits.
4. Practice basic maintenance skills.

II. CONTENT SUMMARY

1. Introduction
 - printing processes relief, planographic, stencil, intaglio
2. Image Creation
 - form and function
 - composition
 - photographic illustration
 - paste-ups
 - make-up
3. Conversion
 - variables-dot size, darkroom techniques, light and color
4. Production
 - presswork
5. Finishing
 - bindery

III. REFERENCES

*Cogoli, *Photo-Offset Fundamentals*

Roberts, *Typographic Design*

Kodak, *Color Separation*

Dupont, *Contact Screen Story*

*Time-Life Books on Photography.

*Most Useful.

IV. CONTENT

Generalizations, concepts and behavioural objectives are outlined on the following pages. Teachers are expected to develop additional behavioural objectives and activities to supplement the identified content and maintain relevancy.

Topic I: INTRODUCTION

Major: Graphic Arts

Generalization A: A meaningful foundation is necessary for a successful and safety conscious vocation in the career field of visual communication.

Course: Graphic Arts 32A
(Advanced)

Concept and Sub-Concepts	Approx. Time	Behavioural Objectives	Activities or Jobs	Resources
<p>1. Printing Processes</p> <ul style="list-style-type: none"> (i.) Relief (ii.) Planographic (iii.) Stencil (iv.) Intaglio 		<p>The student will:</p> <ul style="list-style-type: none"> a. after instruction and study, explain a method used for each printing process and state an advantage and/or disadvantage of each method. 		

Notes:

Generalization B: Image creation is a process of translating an idea into meaningful visual symbols to meet the needs of the customer.

Concept and Sub-Concepts	Approx. Time	Behavioural Objectives	Activities or Jobs	Resources
<p>1. Form & Function</p> <p>The form in which an idea will appear is usually governed by its function.</p> <p>2. Composition</p> <p>3. Photographic Illustration</p>		<p>The student will:</p> <p>a. given an idea, create an appropriate design and layout, including the use of color, taking into account:</p> <ul style="list-style-type: none"> (i.) typography (ii.) design principles (iii.) process involved (iv.) economics involved <p>which will fulfil, to the satisfaction of the customer or teacher the purpose of the job.</p> <p>a. after demonstration and study, do all composition by any available method which is appropriate, including copy-fitting of body composition and display lines, within an error allowance of 5%, and be able to prepare impositions of 8 pages accurately.</p> <p>a. given a camera and film, produce a negative and print which is:</p> <ul style="list-style-type: none"> (i.) representative of the idea 		

Notes:

Generalization

Concept and Sub-Concepts	Approx. Time	Behavioural Objectives	Activities or Jobs	Resources
<p>4. Paste-ups</p> <p>5. Make-up</p>		<p>being communicated</p> <p>(ii.) acceptable for reproduction by the printing process.</p> <p>a. given copy to follow, produce mechanicals of various degrees of complexity to a quality and accuracy acceptable to the teacher and customer.</p> <p>a. given copy to follow, make-up forms of various degrees of complexity utilizing commercially accepted methods within an accuracy of 5%.</p>		

Notes:

Generalization C: Symbols and design elements are converted to reproducible elements which can be assembled into a form to facilitate efficient reproduction and dissemination of visual information.

Concept and Sub-Concepts	Approx. Time	Behavioural Objectives	Activities or Jobs	Resources
<p>1. Variables. Variables must be understood and controlled to achieve optimum results.</p> <p>(i.) Dot size and density</p> <p>(ii.) Darkroom techniques</p> <p>(iii.) Light and color</p>		<p>The student will:</p> <p>a. given material to convert, identify all variables involved and be able to demonstrate control of as many variables as is possible in all operations.</p> <p>b. given a dot size or density to achieve, calculate, explain his procedures and produce a satisfactory negative within 5%.</p> <p>c. given copy to reproduce, use various darkroom techniques to achieve the result specified by the teacher.</p> <p>d. following instruction and study, explain theory of light and color and their application in color printing.</p>		

Notes:

Generalization D: Visual dissemination of reproducible elements must be carried out through the use of rapid, economical, accurate, reliable production processes order to meet societal needs.

Concept and Sub-Concepts	Approx. Time	Behavioural Objectives	Activities or Jobs	Resources
<p>1. Presswork</p> <p>(i.) Impression and Make-Ready</p> <p>(ii.) Register</p> <p>(iii.) Inking</p> <p>(iv.) Dampening</p> <p>(v.) Production economics</p> <p>(vi.) Maintenance</p>		<p>The student will:</p> <p>a. after instruction and study in letterpress and offset lithography, prepare, adjust and control impression to a level acceptable to the instructor.</p> <p>b. given a position O.K., maintain registration to within .001".</p> <p>c. given a press, make adjustments to the rollers and inking system to maintain a determined density level within a range of .10".</p> <p>d. given a press, prepare solutions, make adjustments to the dampening system to achieve the correct balance of dampener to ink.</p> <p>e. within the time limits assigned by the instructor, prepare a piece of equipment for production and maintain a set rate of production.</p> <p>f. given a machine, provide acceptable maintenance</p>		

Notes:

Generalization

Concept and Sub-Concepts	Approx. Time	Behavioural Objectives	Activities or Jobs	Resources
(vii.) Machine design		<p>procedures to keep the machine in operating condition.</p> <p>g. after study, explain and demonstrate how certain mechanical functions of a machine are designed and how they operate.</p>		

Notes:

Generalization E: Visual information is distributed in an orderly, convenient durable form to meet the needs of the consumer.

Concept and Sub-Concepts	Approx. Time	Behavioural Objectives	Activities or Jobs	Resources
1. Bindery		The student will: a. given instruction and machine manuals, prepare all bindery equipment and complete all the necessary operations for job completion to the satisfaction of the customer or teacher.		

Notes:

THE UNIVERSITY OF CHICAGO
DEPARTMENT OF CHEMISTRY
LABORATORY OF ORGANIC CHEMISTRY
505 EAST HALL
CHICAGO, ILLINOIS 60607

Date	Time	Temperature	Remarks

VI. VISUAL COMMUNICATIONS

6. Graphic Arts 32B

Production Technology

INTRODUCTION

Graphic Arts 32B may be taken after completion of the 22A course. This is an activity oriented course based on skills learned in previous courses.

I. OBJECTIVES

The objective of Graphic Arts 32B is to provide a working environment where students will develop an awareness of:

1. the various demands and pressure technology imposes on the individual and the individual imposes on technology.
2. the human element and its relationship to the efficiency of the business.
3. the mechanics of an industrial organization.

II. CONTENT SUMMARY

1. An introduction to industry through production technology
 - modern civilization and industrial dependence
 - facets of industry; men, machines, materials
2. Industry and division of labor
 - job and operation breakdowns
 - flow charts
 - labor allocations
3. Personnel organization
 - industrial organization
 - formal organization
 - informal organization
4. Research and development
 - elements of a salable product
 - industrial research
 - prototype development

5. Simulated industrial production
 - industrial production
 - physical problems
 - sociological problems
6. Technological changes
 - growth of knowledge
 - technological changes and man

III. REFERENCES

Books

Junior Achievement Course Materials

- Brown, J. A. C. *The Social Psychology of Industry*. Penguin Books Ltd., 1965.
- Haws, Robert W. and Carl J. Schaffer. *Manufacturing in The School Shop*. American Technical Society, 1966. Available from General Publishing Co. Ltd., Don Mills, Ontario.
- Hebert, A.R. *Introduction to Management*. Sir Isaac Pitman of Canada, Toronto Ontario, 1966.
- Hulen, Charles R. *A Flock of Mass-Produced Ducks*. Industrial Arts and Vocational Education, September 1970. Pp. 29-34.
- Keane, George R. *Teaching Industry Through Production*. American Industrial Arts Association, 1959.
- Lindbeck, J. R. and Irvin T. Lathrop. *General Industry*. Copp Clark Publishing Co., 1969.
- Lindbeck, John. *Is Package Design your Students' Bag?* Industrial Arts and Vocational Education, February 1972. Pp. 30-31.
- Sayles, Leonard R. and George Strauss. *Human Behaviour in Organizations*. Prentice-Hall Inc., 1966.
- Toffler, Alvin. *Future Shock*. Bantam Books of Canada Ltd., 1970.

Whaley, Don. *Simulate Industry in a Laboratory Factory*. Industrial Arts and Vocational Education, October 1970. Pp. 39-42.

Films

Form and Formula.

16mm, sound, color, 40 minutes.

The Society of the Plastics Industry of Canada, 1262 Don Mills Road, Don Mills, Ontario. Ph. 449-3444.

Explains the research, development and testing of different plastic raw materials touching on their characteristics; forms in which they are available, manufacturing, processes involved; and the development and testing of finished products.

Loose Fill with Pelaspan-Pac.

16mm, sound, color, 11 minutes.

The Dow Chemical Company, Audio-Visual Center, Abbott Road Building, Midland, Michigan 48640.

A new product is available that takes packaging a long step forward in the search for a truly ideal loose-fill packing material. The product, trade-marked Pelaspan-Pac by Dow, consists of strands of foamed plastic. The film points out the property and cost advantages of Pelaspan-Pac over older loose fill packing materials.

Packaging With Pylite.

16mm, sound, color, 12 minutes.

Koppers Company, Plastics Division, Koppers Building, Pittsburgh, Pa. 15219.

This film illustrates the many packaging applications of Pylite foam plastic.

I am a Country.

16mm, color, 25 minutes, 7 seconds. 106C 0167 215.

National Film Board of Canada, Centennial Building, 10031 - 103 Avenue, Edmonton.

This film provides a showcase for products manufactured in Canada, from aircraft designed for special duties, to pre-cast bathrooms that can be installed in one simple operation. There is heavy duty machinery developed for the special needs of Canadian industry. There are women's fashions of universal appeal. All bear the "Made in Canada" label and can be viewed in this film in color and at close hand. Commissioned to Crawley Films Limited for Department of Trade and Commerce.

The Polyolefins.

16mm, sound, color, 28 minutes.

Shell Film Library, Box 100, Calgary 2, Alberta.

This film illustrates the sequential progress followed in researching and developing new materials for existing products. Three polyolefins are referred to in so doing.

Relevant Films:

- a.) Available from the Department of Extension, University of Alberta, Edmonton, Alberta.

	<u>Time</u>	<u>Rent</u>
<i>All I Need is a Convergence.</i>	28 min.	\$3.25
<i>Breaking Down the Delegation Barrier.</i>	30 min.	3.50
<i>Critical Path.</i>	16 min.	2.95
<i>Discipline: Giving Orders.</i>	15 min.	1.75
<i>Discipline: Reprimanding.</i>	10 min.	1.25
<i>Emotional Styles of Human Behavior.</i>	24 min.	1.90
<i>Imagination at Work.</i>	21 min.	2.75
<i>Improving the Job.</i>	9 min.	1.25
<i>Instructing the Worker on the Job.</i>	14 min.	1.50
<i>Introducing the New Worker to His Job.</i>	16 min.	1.75
<i>Maintaining Good Working Conditions.</i>	9 min.	1.25
<i>Maintaining Quality Standards.</i>	10 min.	1.25
<i>Manager Wanted.</i>	28 min.	4.20
<i>*The Department Manager.</i>	30 min.	1.75
<i>*The General Foreman.</i>	30 min.	1.75
<i>*Man on the Assembly Line.</i>	30 min.	1.75
<i>*The Skilled Worker.</i>	30 min.	1.75
<i>*The Vice - Pres.</i>	30 min.	1.75
<i>The New Supervisor Takes a Look at His Job.</i>	13 min.	1.25
<i>Person to Person Communication</i>	14 min.	2.25
<i>*Risk and Forecasting</i>	10 min.	1.55
<i>Workshop Process</i>	12 min.	1.35
<i>You are at the Bargaining Table.</i>	50 min.	4.80
<i>Automation.</i>	84 min.	6.25
<i>*This Automation Age.</i>	28 min.	1.25

*Men at Work.	27 min	1.75
Dues and the Unions.	17 min.	1.25
Fact Finding, not Fault Finding.	13 min.	1.75
*The Grievance.	30 min.	1.80
*Placing the Right Man on the Right Job.	13 min.	1.25
*Shop Steward.	22 min.	1.25

b.) Available from the Workmen's Compensation Board, Edmonton, Alberta.

Communication for Safety Series

Part #3 *Setting 'Em Straight*
 Part #4 *Let's Everybody Help*

Supervising for Safety

Part #1 *Fragile - Handle Feelings with Care*
 Part #2 *It's an Order*
 Part #3 *Call 'Em on the Carpet*

Topic I: AN INTRODUCTION TO INDUSTRY THROUGH PRODUCTION TECHNOLOGY

Major: Graphic Arts

Generalization A: Modern civilization is highly dependent upon industry.

Course: Graphic Arts 32B
(Production Technology)

Concept and Sub-Concepts	Approx. Time	Behavioural Objectives	Activities or Jobs	Resources
<p>1. Modern civilization and industrial dependence</p> <p>2. Lab simulation of industry</p> <p>3. Interrelated facets of industry</p> <p style="padding-left: 20px;">(i.) Men</p> <p style="padding-left: 20px;">(ii.) Machines</p> <p style="padding-left: 20px;">(iii.) Materials</p>		<p>The student will:</p> <p>a. given the appropriate materials explain several ways in which modern civilization is dependent upon industry for its existence.</p> <p>b. following a presentation by the teacher, explain the significance of the course and its relationships to industry in Canada.</p> <p>c. following a group discussion, explain several interrelationships among such industrial facets as men, machines and materials.</p>		<p>Film - <i>I am a Country</i></p> <p><i>Introduction to Management.</i> Chapter 3.</p> <p><i>General Industry</i> - Section 1.</p>

Notes:

Generalization B. Industrial production is highly dependent on a study of the sequential operations central to a product and the associated division of specialized labor required to perform them.

Concept and Sub-Concepts	Approx. Time	Behavioural Objectives	Activities or Jobs	Resources
1. Job and operation breakdowns		The student will: a. given the appropriate materials as an introduction, take a product and isolate the corresponding job and operation breakdown.	Read and discuss procedures followed in constructing job and operations breakdowns. Have students take an existing product and make a job and operations breakdown.	<i>Manufacturing in the School Shop</i> - pp. 19 - 23.
2. Flow charts and diagrams		b. given the appropriate introductory information, prepare "critical incident charts" and "plant layout diagrams" for the production scheduling of a selected product.	Read and discuss procedures followed in preparing "critical incident charts" and "plant layout diagrams". Have students take an existing product and develop related charts and diagrams.	<i>Manufacturing in the School Shop</i> - pp. 29 - 35.
3. Labor allocations		c. with an existing knowledge of job and operations breakdowns, allocate personnel to the required jobs involved in a specified product.	Following the establishment of a job and operations breakdown for a product students can then decide on the duties required by various personnel involved in the product manufacturing and make the appropriate allocation.	<i>Manufacturing in the School Shop</i> - pp. 38 - 40. <i>A Flock of Mass-Produced Ducks</i> - pp. 33.

Notes:

Generalization C: Industrial organizations require an interrelationship of management and labor to facilitate and coordinate the many activities central to manufacturing a product.

Concept and Sub-Concepts	Approx. Time	Behavioural Objectives	Activities or Jobs	Resources
<p>1. Industrial organization</p> <p>(i.) corporation (ii.) partnership</p> <p>2. Formal organization</p> <p>(i.) management (ii.) hierarchy (iii.) communications (iv.) responsibilities (v.) unions</p> <p>4. Informal organization</p> <p>(i.) labor (ii.) interrelationships (iii.) conflicts (iv.) communications (v.) responsibilities</p>		<p>The student will:</p> <p>a. given the appropriate materials, isolate the various classifications of industrial organizations and discuss their advantages and disadvantages (e.g. corporation, partnership, etc.)</p> <p>b. given the appropriate materials, discuss the formal organization making reference to line and staff hierarchies, communication channels, responsibilities and unions.</p> <p>c. given the appropriate materials, discuss the necessity for informal organizations, the ways in which they are formed, the conflicts and pressures within them, the communication among their members and their interrelationship with the formal organization.</p>	<p>Following a reading assignment, a class session can be spent discussing the many classifications of industrial organization.</p> <p>Following a reading assignment, the aspects of formal organization can be discussed in a class by making reference to local industrial firms.</p> <p>Following a reading assignment, the various aspects of the informal organization can be discussed in class. Reference can be made to actual student experiences.</p>	<p><i>Introduction to Management - Chapter 4 and 5.</i></p> <p><i>Social Psychology of Industry.</i></p> <p><i>Human Behavior in Organizations.</i></p> <p><i>Social Psychology of Industry.</i></p> <p><i>Human Behavior in Organizations.</i></p>

Notes:

Generalization D: Research of salable products and the development of prototypes are essential prerequisites to any successful business venture.

Concept and Sub-Concepts	Approx. Time	Behavioural Objectives	Activities or Jobs	Resources
<p>Elements of a salable product</p> <ul style="list-style-type: none"> (i.) markets (ii.) advertising (iii.) competition (iv.) production (v.) cost 		<p>The student will :</p> <p>a. given the appropriate materials, isolate elements such as markets, advertising, demand, competition, production time and costs in considering salable products and apply such considerations in suggesting a product to be produced in the lab.</p>	<p>Keeping the elements of salable products in mind, each student can suggest an appropriate product suitable to lab production. The resulting suggestions can then be discussed in class.</p>	<p><i>Manufacturing in the School Shop</i> - pp. 14 - 18.</p>
<p>Industrial research</p>		<p>b. given the appropriate introductory materials, explain how research is used in industry and the methodology followed in solving problems.</p>	<p>View <i>Form and Formula</i> and <i>The Polyolefins</i> and discuss research on an industrial scale and its implications for the lab.</p>	<p>Films - <i>Form and Formula</i> - <i>The Polyolefins</i></p>
<p>Prototype development</p>		<p>c. given the appropriate introductory information, apply their knowledge of industrial research in developing prototypes for selected products.</p>	<p>Students can divide into groups and research selected products. In the process of their research the following will be considered: job and operation breakdowns, flow charts and diagrams, required men, machines, materials and money, packaging, advertising, jigs and fixtures, pricing, consumer surveys.</p>	<p><i>Manufacturing in the School Shop</i> - pp. 19 - 35.</p> <p><i>Is Package Design Your Students' Bag?</i> - pp. 42 - 49.</p> <p>Films - <i>Loose Fill with Pelaspan-Pac</i> - <i>Packaging with Pylite</i></p>

Notes:

Generalization E: Many of the physical and sociological problems encountered in industrial production can be realistically simulated and studied within the school environment.

Concept and Sub-Concepts	Approx. Time	Behavioural Objectives	Activities or Jobs	Resources
<p>1. Industrial production</p> <p>2. Physical problems</p>		<p>The student will:</p> <ul style="list-style-type: none"> a. with the knowledge gained from preceding tonics, establish an organization in a lab environment and produce a selected product or service. b. given an opportunity to simulate industrial production, encounter, identify, discuss and attempt to solve physical problems such as working conditions, job responsibilities, safety, job training, quality control and advertising and relate these to realistic industrial settings. 	<p>Students can evaluate the previous research of various products and then select one or more items most suitable to lab production. A company will be established and a product or service will result.</p> <p>Students can offer a service or make a product and in so doing will, in all probability encounter problems of a physical nature. Some to be aware of and discuss when the need arises: safety, working conditions, bottlenecks, job responsibilities, PERT, book-keeping, product distribution, meeting production deadlines, wages, cost vs. profit decisions, job training, purchasing of merchandise, quality control, advertising, pros and cons of a formal organization.</p>	

Notes:

Generalization

Concept and Sub-Concepts	Approx. Time	Behavioural Objectives	Activities or Jobs	Resources
3. Sociological problems		c. given an opportunity to simulate industrial production, encounter, identify, discuss and attempt to solve sociological problems such as worker morale, strikes, interrelationships and communications and relate these to realistic industrial settings.	Same as above. Some sociological problems to be alert to include: groups - their function, pros and cons, communication, informal organization, work incentives, worker morale, strikes, labour and management interrelationships.	

Generalization F: With the exponential growth of scientific knowledge, new materials and methods of handling them are developed. Such innovations are influential in technological change and affect the role of man in an industrial setting.

Concept and Sub-Concepts	Approx. Time	Behavioural Objectives	Activities or Jobs	Resources
<p>1. Growth of scientific knowledge</p> <p>2. Technological changes and man</p>		<p>The student will:</p> <p>a. given the appropriate introduction, discuss several current scientific developments and their applications.</p> <p>b. given the appropriate materials, relate the effects that technological change has on man.</p>	<p>Through written activities and class discussion, many examples of technological change and the resultant effects on man's role in industry can be brought forward.</p>	<p><i>Introduction to Management - Chapter 1 and 2.</i></p> <p><i>Future Shock.</i></p>

Notes:

VI. VISUAL COMMUNICATIONS

7. Graphic Arts 32C

Graphic Arts 32C

INTRODUCTION

The last module of the Graphic Arts sequence is open to students who have completed 30 credits or six modules in the major.

The 125 hours of instruction time available in this module may be used to:

- a. Provide greater depth to a module taken previously. Individual students, groups of students or whole classes may elect to study an area in more detail. This in-depth study would be in duplication and reproduction, letterpress, photography or any of the modules named in the Graphic Arts sequence.
- b. Engage in actual Graphic Arts work supervised by the Graphic Arts teacher as a coordinator and a journeyman on the job.

OBJECTIVE

The objective of Graphic Arts 32C is:

To provide the student with an opportunity for further in-depth study in an area of specialization.

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